Menopause: The Journal of The North American Menopause Society
Vol. 27, No. 9, pp. 000-000
DOI: 10.1097/GME.0000000000001564

ORIGINAL STUDY

What do Spanish men know about menopause?

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Abstract

Objective: The aim of this study is to evaluate the level of knowledge men have about menopause and to analyze whether sociodemographic aspects influence this knowledge.

Methods: A total of 560 consecutive surveys were collected during 2019. Surveys were completed by men anonymously, voluntarily, and without incentives. A maximum score of 45 points was considered for the knowledge analysis.

Results: The mean age was 49.13 ± 11.1 years. The most frequent source of information to obtain knowledge about menopause was friends (61.4%). The mean of the questionnaire score was 20.69 ± 6.1 (R: 0-45). The most frequent symptoms associated with menopause were hot flashes and vaginal dryness (93.7%; 48%) and the best-known treatment to improve vaginal health was lubricants at 69.5%. The most common treatment men knew for improving menopause symptoms was menopause hormone treatment; however, 27.9% of men thought there is no treatment for menopause. Differences were found between ages in numbers and grades ($P = 0.032$). Men with a higher level of education had significantly more knowledge than those with primary school education ($P = 0.016$). Differences were shown in men who obtained information from healthcare staff with respect to other sources ($P < 0.001$).

Conclusions: The level of knowledge in men in this sample is limited. Differences were found between ages, level of education, and sources of information. No differences were found between public and private hospitals. Teaching of this knowledge should be carried out by trained personnel, preferably healthcare staff.

Key Words: Knowledge menopause – Men's survey – Men's perceptions – Menopause.

A systematic review shows that menopause is a life stage experienced in different ways. The experience of menopause is characterized by symptoms such as hot flushes, night sweats, mood disorders, and sexual dysfunction, among others, which affect quality of life.[1] It is believed that a couple's knowledge and understanding of all these symptoms could help women improve their relationships and quality of life, as published studies have shown.[2-4] Educational programs for couples need to be designed and implemented. In order to design an appropriate educational program, it is necessary to know in advance what sources men use to obtain information. In addition, it is important to analyze whether sociodemographic aspects such as age, educational level, or socioeconomic level influence this knowledge. Some authors have described this influence on women.[3,5,6]

Men and women turn to more accessible sources such as media (Internet, television, magazines) or family and friends to learn about menopause and do not always come to appropriate conclusions.[7] This is the case with knowledge about menopausal hormone therapy (MHT). Following the conclusions of the WHI (2002) study in which MHT was associated with an increased risk of breast cancer,[8] mass media questioned its safety and indications and encouraged women not to use it. Today, some media still give out this questionable information, often issuing out-of-context statements that once again alert society to MHT's safety. Scientific societies' positions change more rapidly nowadays because of newly published information and to resolve doubts that may arise. An example of this took place on August 29, 2019 with an article published in *The Lancet*[9] that again questioned the safety of MHT. Currently, national and international scientific societies have a clear consensus on MHT and its indications.[10,11]

The aim of this study is to evaluate the level of knowledge that men accompanying their partners to gynecology consultation have about menopause. Based on these findings, tailored educational programs could be implemented.

Received January 8, 2020; revised and accepted March 17, 2020.
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Funding/support: None reported.
Financial disclosure/conflicts of interest: None reported.
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METHODS

Participants

A total of 560 consecutive surveys were conducted in 2019 and analyzed prospectively. The surveys were filled out anonymously, voluntarily, and without incentives by men who accompanied their partner to a gynecological consultation.

Only men who declared being in a couple relationship and that they lived together full time were included in the survey. Men were included in the study if their answer to both questions was yes. We did not ask for their marital status. We assumed that they were the woman's only partner or main partner since it is the most common situation in Spain. There was no preselection by age, socioeconomic level, or level of studies.

Nonprobability sampling was used, which allows for a simple, economical, and fast way to achieve the objective of starting workshops oriented on education in menopause. This sampling is most useful for exploratory studies such as a pilot survey. We are aware of its main defect, which may be lack of representation and the risk of bias due to sampling criteria. This will be mentioned in the limitations of the study.

The surveys were collected from the Gynecology Services at Zarzuela University Hospital (a hospital belonging to a private health service located in a medium to high socioeconomic environment), San Carlos University Clinical Hospital in Madrid and Miguel Servet University Hospital in Zaragoza (both belonging to the public health network located in a mid-class socioeconomic environment).

Although these surveys were anonymous and without incentives, the project was sent to an ethical medical research committee (Hospital Universitario Puerta de Hierro in Madrid) which stated that ''The project titled: What do Spanish men know about menopause?'' is considered an opinion survey and does not require follow-up by the CEIM as a biomedical research project, and that there is no ethical or legal impediment to doing so and no need to sign a written informed consent document; however, the purpose of the study should be informed in simple, clear language.

Physicians were not paid for the study, nor were the men in the study. The only additional expense generated was the printing of the questionnaires assumed by each hospital contributing to the study.

Surveys in men

They were carried out by the authors in the aforementioned hospitals.

The objective of this survey was to analyze whether sociodemographic factors influence men's knowledge about menopause. We tried to find if there were significant differences in the level of knowledge depending on age, level of education, sources of information, and healthcare assistance in public or private hospitals.

The knowledge analysis had a maximum score of 45 points. No negative responses were considered; only correct responses were added to the final score. For Questions 1 and 2, only one answer could be selected from a list. For Questions 3 to 10, more than one answer could be selected from a list. The survey had no open-ended questions. Answers were scored following current hormone therapy position statements.[10,11] Questions in a survey meant to contextualize the topic should be considered fundamental questions and assigned more weight in the score. In our survey, questions 1 and 2 helped identify whether men knew what the menopause period in women is and if they knew the average age at which women typically enter menopause.

With regards to the score, chances to incorrectly answer questions 1 and 2 (where only one answer could be selected) were higher than multiple choice questions, where each wrong answer deducted five points. On the contrary, it is easier to score multiple choice questions because each correct answer adds points individually to the total score in the question, and where it is not necessary to mark all the correct answers to get a positive score. For all these reasons, questions 1 and 2 were given a higher weight than the rest in the score.

Questions in survey

Question 1: Do you know what the term ''menopause'' means**?** Only one answer could be selected from a list, men were informed of that.

Question 2: Do you know the average age at which menopause occurs in Spain? Only one answer could be selected from a list, men were informed of that.

Participants had to provide the entire age range for their answer to be deemed correct.

The list had three answers: 35 to 45 years old; 46 to 55 years old; 56 to 65 years old.

Answer 46 to 55 years old obtained a score of 5 points, other answers scored 0 points.

Question 3: What symptoms are most frequently associated with menopause? Each of the following answers scored 1 point: hot flashes; decreased sexual desire; vaginal dryness; risk of fractures; insomnia. Maximum score was 5 points.

Question 4: Do you know how menopause affects some diseases? Each of the following answers scored 1 point: higher risk of heart attack and brain damage; sexual dysfunction; osteoarthritis; osteoporosis; depression. Maximum score was 5 points.

Question 5: Do you know which of these healthy lifestyle habits are beneficial for women in menopause?

One point was scored for every healthy lifestyle habit marked; all answers were valid. No response scored 0 points. Maximum score was 6 points.

Question 6: Which of these treatments do you know of to treat menopausal symptoms in women? Each of the following answers scored 1 point: phytotherapy; acupuncture; lubricants; hormonal treatment; antidepressants; foods rich in calcium and vitamin D. Maximum score was 6 points.

Question 7: Do you know what the main indications for hormone therapy in menopause are? Each of the following answers scored 1 point: improve bones and joints; improve hot flashes; no pain during sexual intercourse; improve sleep. Maximum score was 4 points.

Question 8: Do you know what the risks of current hormone therapy are? A positive response to risk of thrombosis scored 1 point. Other answers score 0 points. Maximum score was 1 point.

Relationship between breast cancer and hormonal therapy is a controversial issue; however, the correct answers have been based on current position statements.[10,11]

Question 9: How do you think menopause influences sexuality? Each of the following answers scored 1 point: decrease in sexual intercourse; decrease in sexual desire; pain with intercourse. Maximum score was 3 points.

Question 10: What treatments do you know that improve vaginal atrophy in women? Each of the following answers scored 1 point: vaginal lubricants; vaginal moisturizers; estrogen creams and ampules; intercourse; vaginal laser. Maximum score was 5 points.

With these arbitrary scores, we wanted to verify whether the type of hospital (private vs public hospital), age of the men (<45, 45-65, and >65 y) and education level (primary, secondary, professional training, or university studies) scored significantly different thus allowing us to define the predictive variables of better knowledge of menopause.

We have not found references in the literature about age category cut-offs in men in relation with menopause, so this was done arbitrarily. Age categories were established based on what happens in women around their menstrual period. The age category cut off was divided into three groups (45, 45-65, and >65 y); women do not usually have menopause at 45 (premenopausal), women between 45 and 65 (early menopause, menopause transition, late menopause) usually suffer menopausal symptoms and the quality of life scales about menopausal symptoms include this age range; women older than 65 (65 years or older) usually do not have vasomotor symptoms.[12]

Statistical analysis

Statistical analysis was carried out using SPSS 21.0 software for Windows (IBM Corp., Released 2012. IBM SPSS Statistics for Windows, Version 21.0., IBM Corp., Armonk, NY).

Quantitative variables were presented using means and standard deviation. Qualitative variables were shown in frequencies and percentages. Frequencies and percentages were compared using Chi-square test. Continuous nonnormally distributed variables were summarized by the median and interquartile range. Nonparametric variables were compared using the Mann-Whitney test (two independent samples) and Kruskal-Wallis test (various independent samples) to demonstrate differences between groups. Linear regression was carried out between the total score obtained in men and age. Statistically significant results were obtained with a value of $P < 0.05$.

RESULTS

A descriptive study among 560 men was conducted in three hospitals: 58.6% of the surveys (328) were collected at Hospital de la Zarzuela, 37.3% (209) at Hospital Miguel Servet, and 4.1% (33) at Hospital Clínico Universitario San Carlos. The mean age of the sample was 49.13 ± 11.1 years. The most frequent level of studies was University ($n = 275$, 49.1%) and the most frequent physical activity performed with a partner was walking ($n = 419$, 74.8%). The most frequent source of information to obtain knowledge about menopause was friends and relatives (61.4%, $n = 400$) and if they had to solve specific questions about menopause they would go more frequently to healthcare staff, the gynecologist was the healthcare staff they most frequently asked (86.8%). Approximately 40.9% of men did not discuss sexuality with healthcare personnel, the most frequent reason being that healthcare personnel did not ask about these topics (140, 61.1%). Table 1 shows sociodemographic factors (education level, sports with a partner, conversation with healthcare personnel about sexuality, sources of knowledge about menopause, and resolution of doubts about menopause).

The most frequent symptoms men associated with menopause were hot flashes, vaginal dryness, decreased sexual desire, and weight gain (93.7%, 48%, 45.2%, and 44.1%, respectively). The most frequent response on how menopause can affect some diseases was that ''menopause has no impact on diseases'' was 83%. The most common treatment men knew for improving menopause symptoms is menopause hormone therapy (45.5%); however, 27.9% of men think there is no treatment for menopause. Regarding healthy lifestyle habits, not smoking and physical exercise were the most frequently reported healthy habits (77%, 75.4%). When

TABLE 1. *Sociodemographic factors in men*

	N	%
Education level		
School	42	7.5
High school	50	8.9
Professional training	193	34.4
University	275	49.1
Sports with partner		
No	135	24.1
Yes	425	75.9
Walk	419	74.8
Run	82	14.7
Swim	55	9.1
Yoga	31	5.5
Others	13	2.3
Talk about sexuality with healthcare staff		
Yes	331	59.1
No	229	40.9
Distrust	8	3.5
Shame	51	22.3
Never ask me	140	61.1
I do not believe it is important	30	13.1
To obtain knowledge about menopause		
Friends and family	400	61.4
Magazine and press	168	30.0
Television	111	19.8
Healthcare staff	107	19.1
Internet	76	13.6
Doubts about menopause		
Gynecologist	486	86.8
General practitioner	57	10.2
Midwife	13	2.3
Nurse	4	0.7

Data are given as frequencies (%).

asked about the main indications for hormonal treatment of menopause, the most frequent answers were to improve hot flushes (55.4%) and delay aging (27.7%). Approximately 33% of men were unaware of the main indications for the treatment of menopause. When asked about the most frequent risks of hormone therapy for menopause, 60.7% answered that they were unaware of these risks. The most frequent response on how menopause affects sexuality was that it decreased sexual desire by 50.4%. The best-known treatment for men to improve vaginal health was lubricants at 69.5%. The menopause awareness questionnaire is shown in Table 2.

The median of the questionnaire score was 20.0 (interquartile range: 17.00-25.00).

Age in men was classified into three groups (<45, 45-65 , and >65 y) and the scores showed statistically intragroup differences ($P = 0.011$) (Table 3).

Differences between ages in numbers and grades were determined by scatterplot showing statistically significant differences ($P = 0.032$) finding an increase in the score of 0.05 points per man year ($R^2 = 0.008$) (Fig. 1).

Another comparison was made between groups by study level, showing statistical differences between school and others study levels ($P = 0.028$) (Table 3).

Finally, to evaluate whether the source of information was important in the knowledge of menopause, those men who obtained information from healthcare staff with respect to other sources (friends, television, press, and Internet) showed statistical differences ($P < 0.001$). No differences were found in the questionnaire scores between men attending public and private hospitals ($P = 0.681$) (Table 3).

DISCUSSION

This study presents the first results of a knowledge test carried out in Spanish men who accompany their partners to the gynecology service. It differs from other surveys[13,14] in that it did not offer economic incentives and it was face-to-face, which allows us to explain the reason for the survey. There were no selection criteria based on age, education level, socioeconomic level, or access to health care in a public or private hospital. This allowed us to know whether there were differences in men's knowledge in our sample.

In this study we found that the most frequent physical activity was walking with their partner; it is a sociodemographic factor surveyed in men and we know it is not relevant to the study aims, but we know that physical activity habits may deteriorate after cohabitation, leading to weight gain and increased risk of lifestyle diseases; hence, health promotion for couples can improve health behaviors and potentially lower the risk of lifestyle diseases.[15]

Another piece of information provided by this study is that men with the greatest knowledge of menopause are those informed by healthcare staff. We could establish an indirect comparison in this respect with other studies,[2,4] that found that men's knowledge improved after educational programs. To our knowledge there is no regulated educational program currently for men in Spain.

TABLE 2. *Questionnaire about knowledge in menopause*

Questions of survey	
1. Do you know the meaning of term ''menopause?''	
Date of last period, *n* (%)	312 (55.7)
Hot flashes in women, *n* (%)	26 (4.6)
Alterations of the menstrual period, *n* (%)	215 (38.4)
I do not know, *n* (%)	7 (1.2)
2. Do you know the age of menopause?	
35-45 y, *n* (%)	21 (3.8)
46-55 y, *n* (%)	447 (9.8)
56-65 y, *n* (%)	92 (16.4)
3. Do you know what symptoms are often associated with menopause?	
Hot flashes, *n* (%)	525 (93.7)
Decreased sex drive, *n* (%)	253 (45.2)
Weight gain, *n* (%)	247 (44.1)
Vaginal dryness, *n* (%)	269 (48.0)
Risk fracture, *n* (%)	67 (12.0)
Insomnia, *n* (%)	70 (12.5)
Breast cancer, *n* (%)	18 (3.0)
I do not know, *n* (%)	19 (3.4)
4. Do you know how menopause can affect some diseases?	
It has no impact, *n* (%)	485 (83.0)
Increased risk of heart attack and stroke, *n* (%)	41 (7.4)
Sexual dysfunction, *n* (%)	152 (27.1)
Osteoarthritis, *n* (%)	100 (17.9)
Osteoporosis, n (%)	282 (50.5)
Depression, *n* (%)	193 (34.6)
Breast cancer, *n* (%)	61 (10.9)
The quality of life improves, *n* (%)	4 (0.7)
I do not know, *n* (%)	72 (13.0)
5. Do you know what of these healthy lifestyle habits are beneficial for women in menopause?	
Diet rich in calcium, *n* (%)	389 (69.5)
Exercise, *n* (%)	422 (75.4)
No smoking, *n* (%)	431 (77.0)
Do not use alcohol, *n* (%)	410 (73.2)
1.5 L of water intake per day, *n* (%)	406 (72.6)
Intake of fruits and vegetables, *n* (%)	414 (73.9)
6. Which of these treatments do you know to treat menopausal symptoms in women?	
There is no treatment, *n* (%)	156 (27.9)
Phytotherapy, *n* (%)	86 (15.4)
Acupuncture, *n* (%)	30 (5.4)
Lubricants, *n* (%)	152 (27.1)
Hormonal treatment, *n* (%)	255 (45.5)
Antidepressants, *n* (%)	88 (15.7)
Foods rich in calcium and vitamin D, *n* (%)	153 (27.3)
I do not know any, *n* (%)	42 (7.5)
7. Do you know what the main indications of menopausal hormone therapy are?	
Delay aging, *n* (%)	99 (27.7)
Improve bones and joints, *n* (%)	191 (34.1)
Improve hot flashes, *n* (%)	310 (55.4)
Not having pain in sexual intercourse, *n* (%)	44 (7.9)
Improve sleep, *n* (%)	116 (20.7)
I do not know, *n* (%)	185 (33.0)
8. Do you know what the risks of hormonal therapy are?	
Osteoporosis, *n* (%)	67 (12.0)
Weight gain, *n* (%)	99 (34.1)
Breast cancer, *n* (%)	68 (12.1)
Risk of thrombosis, *n* (%)	53 (9.5)
Uterine cancer, *n* (%)	26 (4.6)
I do not know what it produces, *n* (%)	340 (60.7)
9. How do you think that menopause affect the sexuality?	
It does not affect her, *n* (%)	147 (26.2)
Decreased sexual intercourse, *n* (%)	214 (38.3)
Decrease sexual desire, *n* (%)	282 (50.4)
Pain in sexual intercourse, *n* (%)	116 (20.8)
10. What treatments do you know to improve vaginal atrophy in women?	
Lubricants, *n* (%)	389 (69.5)
Moisturizer, *n* (%)	74 (13.4)
Estrogen creams and ovules, *n* (%)	76 (13.6)
Have sex, *n* (%)	22 (5.7)
Vaginal laser, *n* (%)	19 (3.4)
I do not know, *n* (%)	122 (21.8)

Questions 1 and 2: only one answer could be selected from a list and men were informed about that; Questions 3-10 more than one answer could be selected from a list. Answers in questions no 8 scored following current hormone therapy positions statement.[10,11] The survey had no open-ended questions. Data are given as frequencies (%).

TABLE 3. *Knowledge comparison between age groups, study level, sources of information, and health service type*

	Score	*P*
Age		0.011
<45 years, median [IR]	19.00 [15.00-24.00]	
45-65 years, median [IR]	21.00 [18.00-25.00]	
>65 years, median [IR]	19.50 [16.00-24.00]	
Study level		0.028[a]
School, median [IR]	18.00 [15.75-22.25]	
High school, median [IR]	20.50 [15.75-24.25]	
Professional training, median [IR]	21.00 [17.00-24.00]	
University, median [IR]	21.00 [17.00-25.00]	
Sources or information		0.001[b]
Friends and family	20.00 [15.75-25.20]	
Magazine and press	21.00 [16.70-22.25]	
TV	21.00 [16.75-26.20]	
Internet	21.00 [16.75-27.30]	
Healthcare staff	24.00 [19.75-31.25]	
Hospital		0.681
Private health service	20.00 [14.75-26.25]	
Public health service	20.00 [15.75-25.25]	

Data are given in median and interquartile range; p25-p75 (IR). Range score in knowledge survey (0-45). Analysis post hoc using the Mann-Whitney test (two independent samples) and Kruskal-Wallis test (various independent samples) to demonstrate differences between groups.
[a]Total score was lower in school compared with other study levels ($P = 0.028$).
[b]Total score was lower in other sources of information compared with healthcare staff ($P < 0.001$).

In our study we find a lack of knowledge in basic aspects of menopause when performing the survey; this lack of knowledge could be explained by the sources of information from which knowledge were obtained (the most frequent source of information in men to obtain information about menopause was friends and relatives at 61.4%); very few men turn to healthcare staff (19.1%). This allows us to affirm that health education will probably correct errors and improve knowledge.

The study shows that men with a higher level of education have significantly more knowledge about menopause than those with a lower level of education and this could be related to the national curriculum that addresses the issue of menopause.

From this study we have learned that there is a lack of proactive information from healthcare personnel as we discovered that the main reason men do not discuss sexuality or menopause with healthcare staff is that healthcare staff do not ask them. This allows us to reflect on the little importance we are giving to information on sexuality and menopause and the need for educational programs to improve knowledge, as other studies suggest.[13,16,17]

Another relevant point from our study is that men's age is relevant to their knowledge on menopause. Linear regression results indicate that men have a greater knowledge about menopause at an older age. We suggest that this greater knowledge could be explained by their life experience with

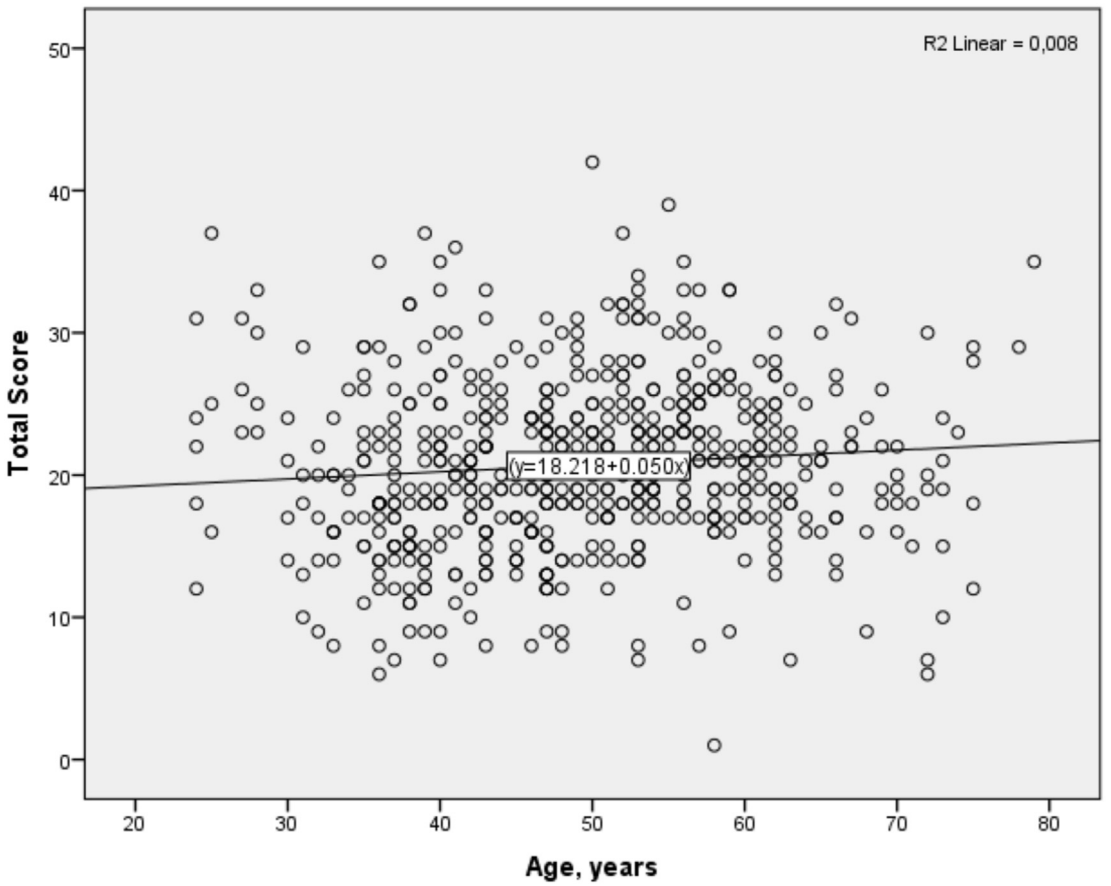

FIG. 1. Scatterplot for trend effect of age in men over scores obtained.

their partners helping them improve their knowledge about menopause-related symptoms. Younger men's partners have not yet experienced these menopause symptoms, so they probably are unaware of what happens during the menopause. We have no one to compare with respect to these findings because ours is the first study to report them.

Regarding the most frequent symptoms of menopause, in this study we found that the most frequent symptoms known to men are night sweats or hot flashes and in this regard there is an agreement with Parish et al,[13] that also finds these symptoms as the most known to men. On the effect menopause has on other diseases, 83% of men surveyed do not know that menopause can worsen other diseases, and, in this respect, we have no one to compare.

When asked about treatments for menopause, our study agrees with the MATE survey study[13] that knowledge of treatment options in men is limited. We, however, provided new data that almost 27.9% of men thought menopause had no treatment and that the treatment most known to men to improve vaginal health was lubricants at 69.5%.

Regarding knowledge about the indications of menopause treatment and the risks of this treatment we found in the study that most men were unaware of these data. These data are provided only in this study.

When asked about sexuality in menopause, one of the most frequently known points by men is that sexual desire decreases (50.4%), and this is associated with 26% of men surveyed believing that menopause does not affect sexuality. Regarding these data, we agree with the study by Jannini and Nappi,[18] that it is important to adopt a couple-oriented approach to control and improve sexual satisfaction, but for us it is also important that the couple is aware of other symptoms that affect the menopausal woman.

Following findings from the study, our hospital (Hospital de la Zarzuela) will begin educational programs in menopause for couples in 2020 that will allow expanding knowledge. All these programs will be carried out by properly trained healthcare personnel.

A sampling limitation is that there has been nonprobability sampling, which allows for a simple, economical, and fast way to achieve the objective of starting workshops oriented on education in menopause. We are aware of its main defect, which may be the lack of representation and the risk of bias due to sampling criteria and probably the results presented here may be an upper bound on knowledge in the wider population of mid-aged men.

CONCLUSIONS

Men know some facts related to menopause, but their knowledge is currently limited. Differences by age, level of education, and sources of information were found. No differences were found between men attending public and private hospitals. Information about menopause should be carried out by trained personnel, preferably healthcare staff, who really know all the aspects related to this stage of life. A more couple-oriented approach is needed to improve this knowledge to help women with menopausal symptoms live this stage more successfully.

Acknowledgments: The authors thank all the men from every hospital for participating in the surveys. The authors also thank Claudia Aragon Lara for her help in preparing the manuscript.

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